Remarks

Applicants thank the Examiner for his careful consideration of this application and for the helpful interview of June 6, 2005. Reconsideration of this application is now respectfully requested in view of the amendments above and the following remarks.

Claims 1 and 3-18 are now pending in the application, with Claims 1, 3, 11, and 16-18 being the independent claims. Claim 2, which was previously non-elected and withdrawn, has been cancelled without prejudice to pursue its subject matter subsequently. Claim 11 has been amended. New Claims 13-15, which find support at least in the drawings (e.g., Figs. 26-31), have been added. New independent Claims 16-18, which find support at least in the claims as filed, have also been added.

At pages 2-4, the Office Action provisionally rejects Claims 1 and 3-12 under the doctrine of obviousness-type double-patenting as being unpatentable over co-pending Application No. 10/321,669, either alone or in view of Hively et al. (U.S. Patent No. 5,514,884) or Cox (U.S. Patent No. 6,693,454). While Applicants do not concur with these rejections, they have elected to provide a Terminal Disclaimer, as a matter of expediency. In view of the Terminal Disclaimer, Applicants respectfully request withdrawal of these rejections.

At pages 4-6, the Office Action rejects Claims 1 and 3-5 under 35 U.S.C. § 103(a) as being unpatentable over Shenoy (U.S. Patent No. 5,994,766) in view of Sivilotti et al. (U.S. Patent No. 6,316,334). At pages 6-7, the Office Action rejects Claims 6-10 under 35 U.S.C. §

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103(a) as being unpatentable over Shenoy and Sivilotti et al., further in view of IBM Technical

Disclosure Bulletin 6/86, Vol. 29, No. 1, pp. 88-94 ("TDB") and Cox. Finally, at pages 7-8, the

Office Action rejects Claims 9-12 under 35 U.S.C. § 103(a) as being unpatentable over Shenoy,

Sivilotti et al. and TDB or Cox, and further in view of Hively. These rejections are respectfully

traversed for at least the following reasons.

First, Claims 1 and 11 (as amended) both recite the presence of "configurable I/O cells."

This term appears in the specification, for example, in paragraphs 129, 154, and 158. In

particular, paragraph 129 discusses a "configurable I/O that could be customized to the specific

function by the customized layers." Paragraph 154 discusses "via-configurable I/O." Paragraph

158 discusses "enhanced via-configurable I/O." Note that element 26 in Fig. 2 is described in the

specification (e.g., in paragraph 157) as being an "I/O cell" and is also referred to (e.g., in

paragraph 129) as being an "area I/O." Hence, it is clear that the terms "I/O cell" and "area I/O"

are being used interchangeably, and that all of these portions of the specification are discussing

the same thing.

Given this, it becomes clear that "configurable I/O cells" are I/O cells that may be

customized to perform particular functions (which may include, but are not limited to, input,

output, differential input, differential output, and/or other functions). This may be done by

designing customized layers or by the use of vias to make various connections (or, the vias may

be included in a customized via layer).

With this understanding of what is meant by "configurable I/O cells," a careful perusal of Shenoy et al. and Sivilotti et al. reveals that neither of these references discloses or suggests the use of configurable I/O cells. In particular, the Office Action relies on Shenoy et al. at Fig. 1 and col. 4, line 66 to col. 5, line 11 to teach the use of configurable I/O cells. Applicants, however, are able to find no such teaching there or anywhere else in Shenoy et al. (or anywhere in Sivilotti et al.). For at least these reasons, therefore, it is respectfully submitted that Claims 1 and 11-14 are allowable over the cited prior art.

Claim 3 recites, among other features, "a repeating module containing logic cells and I/O cells." The Office Action cites Shenoy et al., col. 4, line 1 to col. 8, line 20, as teaching such a repeating module. Note that "repeating" implies that the module must occur at least two identical times, in keeping with the ordinary meaning of "repeat" (for example, see the dictionary definition found in Webster's II New College Dictionary 939 (Houghton-Mifflin Co., 1995: "to do, experience, or produce again"). Element 19, referred to in the Office Action at page 6, is described as an "active region" or as "logic circuitry" at col. 5, line 50 ff., and is thus does not show any repeating module containing logic cells and I/O cells. Element 100, also referred to in the Office Action at page 6, is described, e.g., at col. 7, lines 38 ff., as a "logic circuit layer," again, not teaching a repeating module containing logic cells and I/O cells. Nor have Applicants found any such teaching anywhere else in Shenoy et al. Applicants are also unable to locate any such teaching anywhere in Sivilotti et al. Additionally, Applicants have not found any suggestion of a combination of such a borderless array having such a repeating module in

combination with a redistribution layer as claimed. For at least these reasons, it is respectfully submitted that Claims 3-10 and 15 are allowable over the cited prior art.

New Claims 13-15, depending from Claims 11, 1, and 3, respectively, have been added. Each of these claims adds recitation that a (configurable) I/O (cell) comprises at least two electronic components and multiple possible connections that may be completed using custom vias. Applicants have not found teachings of such I/Os in any of the cited prior art and respectfully submit, therefore, that Claims 13-15 are allowable over the cited prior art for at least this reason.

New Claim 16 recites, among other features, a "repeating core," which, as discussed above, is not present in the cited prior art, and is not present in the cited prior art in combination with the other features claimed in Claim 16. Additionally, the prior art does not teach or suggest the combination of a borderless logic array comprising a repeating core with area I/Os and a redistribution layer, as claimed.

New Claims 17 and 18 recite, among other features, "configurable I/O," which, as discussed above, is not present in the cited prior art.

While Applicants do not necessarily concur with the Office Action's characterizations of the claims and/or the references with regard to other claimed features, Applicants choose not to discuss each such feature. Consequently, the lack of explicit discussion is not to be understood as indicating tacit agreement with such characterizations.
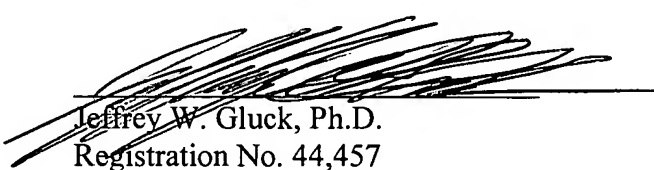
Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants, therefore, respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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